

**CHAIR FOR HEALTHY SITTING****Cross-Reference to Related Applications:**

This application claims priority to provisional application no. 60/\_\_\_\_\_, filed on August 13, 2003.

**Field of the Invention**

[01] The present invention relates to an apparatus for healthy and corrective sitting. In particular, the invention relates to a chair for meditative or conventional sitting that promotes correct back and lower body posture, which allows for greater comfort.

**Background of the Invention**

[02] In traditional forms of meditation there exist two major positions for sitting, the lotus position and the seiza position. In the lotus position (as shown in Figure 6), the individual's legs are crossed and lay in front of the hips. Another position is known as the seiza position in which the individual kneels with his or her buttocks resting on the heels (as shown in Figure 5). Due to muscle, bone or joint related complications, many individuals wishing to engage in meditation, especially beginners, find it difficult to sit in either pose for extended periods of time without developing pain or restricting circulation in the legs. Thus, many sitting

1 aids such as chairs and cushions have been developed to  
2 assist the individual wishing to meditate using one of  
3 these conventional poses.

4 [03] For example, low, cylindrical cushions filled  
5 with buckwheat have traditionally been used by individuals  
6 during meditation. A cushion about shoulder-width may be  
7 used to support an individual sitting in the lotus  
8 position, while a slightly smaller cushion may support a  
9 individual in the seiza position. However, over time the  
10 buckwheat deteriorates, reducing support. Additionally,  
11 these buckwheat cushions tend to be large, heavy, and  
12 somewhat cumbersome, impeding transportation and efficient  
13 storage.

14 [04] More recently, dense foam and wooden blocks have  
15 been used to support individuals seated in the lotus  
16 position. These and other alternatives, such as low  
17 chairs, one of which is disclosed in Conway et al., U.S.  
18 Pat. No. 5,876,098, are limited to the lotus position and  
19 also difficult to transport due to their size.

20 [05] Similarly, benches consisting of a horizontal  
21 platform wide enough to support the buttocks and raised  
22 from the ground by two vertical legs at opposite ends of  
23 the platform are used to assist the individual seated in  
24 the seiza position. This allows for proper vertical

1 alignment by positioning the buttocks above the heels while  
2 eliminating the pressure caused by the individual's weight  
3 on the heels and lower legs. However, the height of such  
4 benches is typically too high from the ground due to the  
5 clearance required for the heels, causing excessive weight  
6 to be placed on the individual's knees. This causes  
7 discomfort in the knees during extended periods of  
8 meditation.

9 [06] Other chairs also exist for sitting on the  
10 ground. Some of such chairs consist of a right-angled  
11 support that sits directly on the ground and is usually  
12 cushioned. However, these chairs do not provide a  
13 difference in elevation between the hips and legs, causing  
14 improper alignment of the back.

15 [07] Therefore, there is a need for a chair which is  
16 portable and can be used in different configurations for  
17 either general sitting on the ground or meditation in the  
18 lotus or seiza positions, enabling the user to sit  
19 comfortably for extended periods of time. The present  
20 invention meets these needs.

21

## 22 **Objects of the Invention**

23 [08] In light of these apparent needs, it is an object  
24 of the present invention to provide a chair that promotes

1 good posture, providing proper height of the hips as well  
2 as proper curve of the lower back.

3 [09] It is an object of the present invention to  
4 provide a chair for meditation that may be used at  
5 different heights for either the lotus or seiza position.

6 [010] It is an object of the present invention to  
7 provide a chair that prevents excessive pressure on the  
8 lower legs and heels of the user.

9 [011] It is an object of the present invention to  
10 create a sitting position that is comfortable and  
11 maintainable for long durations of time.

12 [012] It is an object of the present invention to  
13 create a chair that may be injection molded and produced  
14 economically.

15 [013] It is an object of the present invention to  
16 create a chair that may be stackable.

17 [014] It is an object of the present invention to  
18 create a chair that is aesthetically pleasing and may be  
19 used as a piece of accent furniture. Along these same  
20 lines, the invention is such that it is easy to manufacture  
21 in different colors, patterns, styles, materials, etc.

22 [015] It is an object of the present invention to  
23 provide a lightweight, low profile chair that may be easily  
24 transported by an individual.

1           [016]       It is an object of the present invention to  
2 provide a chair that may be utilized on a stool or regular  
3 chair to promote proper posture in positions other than  
4 that of meditation.

5           [017]       It is an object of the present invention to  
6 provide a chair that may be used by children for sitting on  
7 the ground with proper posture. This chair would be scaled  
8 down in size in accordance with the size of the child.

9           [018]       It is an object of the present invention to  
10 provide a chair that may be used outdoors for activities  
11 including, but not limited to, sporting events, hunting,  
12 fishing, or camping.

13          [019]       It is an object of the present invention to  
14 provide a chair that may be used for individuals desiring  
15 to sit comfortably on the ground, floor, or desired seating  
16 level.

17          [020]       It is an object of the present invention to  
18 provide a chair which is collapsible and/or foldable (e.g.,  
19 into a planar sheet) for easy storage and/or transport.

20          [021]       It is an object of the present invention to  
21 provide a chair as described with various leg  
22 configurations such that the legs may be extendable,  
23 collapsible, foldable, etc.

1           [022]       Other objects, features, and characteristics  
2 of the present invention, as well as the methods of  
3 operation and functions of the related elements of the  
4 structure, and the combination of parts and economies of  
5 manufacture, will become more apparent upon consideration  
6 of the following detailed description with reference to the  
7 accompanying drawings, all of which form a part of this  
8 specification.

9

#### 10   **Summary of the Invention**

11           [023]       The present invention relates to a  
12 supportive chair for individuals wishing to sit comfortably  
13 at a low height above and relative to the ground, floor, or  
14 desired seating level. Generally, the seat raises the  
15 buttocks and hip of the user off of the seating level,  
16 creating a relative height difference between the user's  
17 hip and legs. This raising of the hip relative to the legs  
18 creates a sitting posture that promotes vertical back  
19 alignment. The user's lower back is pushed into a slight  
20 forward curve, providing proper back posture.  
21 Consequently, the user is able to comfortably maintain this  
22 position with a reduced amount of back muscle strain,  
23 allowing prolonged comfortable seating periods.

1           [024]       Preferably, the chair according to the  
2   invention may be made at any of a multitude of heights  
3   relative to the ground, floor, or desired seating level to  
4   accommodate different size users and different desired  
5   methods of seating. Optionally, the chair may be  
6   configured such that the height is adjustable. This height  
7   may be varied by simply adjusting the length or position of  
8   the legs. For example, two major styles of meditative  
9   seating positions are supported by the invention. The  
10   lotus or cross-legged seating position is supported by a  
11   lower seat height. The seiza seating position, where the  
12   user's legs are folded over at the knee, locating the thigh  
13   over the calf, is enabled by a slightly higher seat height  
14   along with the unique design of the primary seating  
15   surface.

16         [025]       The special cutout design of the primary  
17   seating surface allows for the heels of the user to be  
18   tucked under the buttocks while seated in the seiza  
19   position. The curved back support along with the primary  
20   seating surface support the majority of the user's weight.  
21   This enables the individual to sit with no pressure being  
22   exerted on the heels from the buttocks. This cutout design  
23   also provides a convenient way to carry the chair.

1           **[026]**       The chair may also be made at different  
2 diameters to accommodate different sized users. Smaller  
3 chairs may be used by children in different venues such as  
4 the home or school to sit comfortably and with proper  
5 posture.

6           **[027]**       Optionally, the chair according to the  
7 present invention may include a cushion attached to the  
8 seating surface or surfaces to provide additional comfort,  
9 support and style.

10          **[028]**       The present invention may also be used on or  
11 as an addition to the seats of standard chairs to improve  
12 the posture and back alignment of the user. Proper hip  
13 elevation promotes the slight forward curve of the lower  
14 back required for comfortable, extended sitting.

15          **[029]**       Depending on the material used for  
16 manufacture, the present invention may or may not include  
17 supplementary structural supports connecting the primary  
18 and secondary seating surfaces.

19

## 20 **Brief Description of the Drawings**

21           A further understanding of the present invention can  
22 be obtained by reference to a preferred embodiment set  
23 forth in the illustrations of the accompanying drawings.  
24 Although the illustrated embodiment is merely exemplary of



1 systems for carrying out the present invention, both the  
2 organization and method of operation of the invention, in  
3 general, together with further objectives and advantages  
4 thereof, may be more easily understood by reference to the  
5 drawings and the following description. The drawings are  
6 not intended to limit the scope of this invention, which is  
7 set forth with particularity in the claims as appended or  
8 as subsequently amended, but merely to clarify and  
9 exemplify the invention.

10 For a more complete understanding of the present  
11 invention, reference is now made to the following drawings  
12 in which:

13 **FIG 1** shows a perspective view of the preferred  
14 embodiment of the chair according to the invention;

15 **FIG 2** shows a back view of the chair shown in FIG. 1;

16 **FIG 3** shows a top plan view of the chair shown in FIG.  
17 1;

18 **FIG 4** shows a right side view of the chair shown in  
19 FIG. 1;

20 **FIG 5** shows a side perspective view of the chair shown  
21 in FIGs. 1-4 as used in the seiza position; and

22 **FIG 6** shows a side perspective view of the chair shown  
23 in FIGs. 1-4 as used in the lotus position.  
24

## 1 Detailed Description of a Preferred Embodiment

2 [030] As required, a detailed illustrative  
3 embodiment of the present invention is disclosed herein.  
4 However, techniques, systems and operating structures in  
5 accordance with the present invention may be embodied in a  
6 wide variety of forms and modes, some of which may be quite  
7 different from those in the disclosed embodiment.  
8 Consequently, the specific structural and functional  
9 details disclosed herein are merely representative, yet in  
10 that regard, they are deemed to afford the best embodiment  
11 for purposes of disclosure and to provide a basis for the  
12 claims herein which define the scope of the present  
13 invention. The following presents a detailed description  
14 of the preferred embodiment (as well as some alternative  
15 embodiments) of the present invention.

16 [031] Referring first to Figures 1-4, depicted is  
17 the preferred embodiment of the chair according to the  
18 present invention. In the preferred embodiment of the  
19 present invention a chair 1 comprises a primary seating  
20 surface 2 that the user contacts which is horizontal or  
21 slightly angled relative to the ground or floor on which  
22 the chair is placed. A secondary seating surface 3 curving  
23 around the rear of the primary seating surface 2 provides  
24 additional support for the user's buttocks. The secondary

1 seating surface 3 is inwardly and downwardly sloped and  
2 provides a low lateral boundary for the user, thereby  
3 promoting proper alignment of the buttocks on the primary  
4 seating surface 2.

5 [032] In a preferred embodiment, secondary seating  
6 surface 3 is bounded by an inner circumferential edge 17  
7 and an outer circumferential edge 18, where the inner  
8 circumferential edge 17 approximates a section of an  
9 ellipse having major axis dimension  $f$  and minor axis  
10 dimension  $g$ . The ratio of the major axis  $f$  to the minor  
11 axis  $g$  should preferably be greater than one (1) and less  
12 than three (3). As shown in Figure 3, dotted line 16  
13 represents the missing portion of the ellipse not actually  
14 completed by inner circumferential edge 17. This dotted  
15 line 16 is not representative of any actual piece of the  
16 chair, and is shown only to provide a reference end point  
17 for minor axis dimension  $g$ .

18 [033] While preferably circular or elliptical, the  
19 shape of outer circumferential edge 18 may be determined by  
20 aesthetic considerations, given that the minimum distance  
21 between inner circumferential edge 17 and outer  
22 circumferential edge 18 is sufficient to provide comfort  
23 and support. In a preferred embodiment, the minimum

1 distance between inner circumferential edge 17 and outer  
2 circumferential edge 18 is at least 0.5".

3 [034] Preferably, supports 5, 6 anchor the  
4 secondary seating surface 3 to the primary seating surface  
5 2 and rear legs 7, 8. Depending on the material of  
6 manufacture, these supports 5, 6 may be omitted, creating a  
7 cantilevered secondary seating surface 3. Additional legs  
8 11, 12 provide support for the primary seating surface 2.  
9 Alternatively, supports 5, 6 and rear legs 7, 8 may be  
10 formed in a single structure.

11 [035] In an alternative embodiment, additional  
12 legs 11, 12 and rear legs 7, 8 may comprise different  
13 configurations or heights. For example, legs 7, 8, 11, 12  
14 may be extendable via the attachment of separate extension  
15 legs, or via a telescoping mechanism. In addition, legs 7,  
16 8 and legs 11, 12 may comprise a single element having a  
17 large base surface in order to reduce the pressure exerted  
18 onto the ground so that chair 1 does not sink into soft  
19 ground or damage finely finished floors. Further, legs 7,  
20 8, 11, 12 may be foldable or collapsible such that they  
21 fold into the plane of primary seating surface 2 or  
22 tertiary seating surface 4. Additionally, legs 7, 8, 11,  
23 12 may comprise different shapes, such as arch-shaped,  
24 cylindrical, rectangular, tapered, etc.

1           [036]     In cantilevered embodiments, where supports  
2     5, 6 (or equivalent) are not present, the shape of outer  
3     circumferential edge 18 may be partially determined by the  
4     desired stiffness of cantilevered secondary seating support  
5     3. The cantilever spring rate may be chosen to provide  
6     some self-adjustment under the load provided by the portion  
7     of a seated user's weight being supported on secondary  
8     seating surface 3.

9           [037]     Referring again to the preferred embodiment  
10    of the present invention depicted in Figures 3 and 4, a  
11    tertiary seating surface 4 slopes downward and away from  
12    the front of primary seating surface 2, allowing the user's  
13    legs to comfortably extend away from the buttocks (which  
14    are located on the primary seating surface as shown in  
15    Figures 5 and 6), down to the floor, ground or other  
16    seating level. This sloped transition 4 between the  
17    primary seating surface 2 and the front edge of the chair  
18    gradually provides transitional support to a user's legs at  
19    the front edge of the chair 1, thereby reducing restriction  
20    of blood flow and lymph fluid flow in the legs of the user  
21    when seated for an extended period of time. Furthermore,  
22    while Figure 4 depicts tertiary seating surface 4 in  
23    alignment with cantilevered secondary seating surface 3,  
24    this is not necessary. That is, chair 1 may be configured

1 such that tertiary seating surface 4 is at some angle with  
2 respect to cantilevered secondary seating surface 3.

3 [038] When used at a sufficient seat height, the  
4 rounded cutouts 9, 10 from the rear sides of the primary  
5 seating surface 2 allow the user to tuck his or her heels  
6 under his or her buttocks as in the tucked seating  
7 position. Cutouts 9, 10 in conjunction with the raised  
8 height of the primary seating surface allow the user to sit  
9 comfortably with little or no weight exerted upon the heels  
10 by the buttocks while seated in the tucked position.

11 [039] Further, chair 1 may be collapsible such  
12 that secondary seating surface 3 and tertiary seating  
13 surface 4 may be planar with respect to each other such  
14 that angle  $e$  is approximately zero. For example, secondary  
15 seating surface 3 and tertiary seating surface 4 may be  
16 connected to primary seating surface 2 via a hinge  
17 mechanism such that the seating surfaces become  
18 approximately co-planar. In addition, chair 1 may be  
19 configured such that legs 7, 8, 11, 12 may also be folded  
20 or collapsed into the plane of primary seating surface 2.

21 [040] The preferred embodiment described above  
22 comprises a chair as being made of multiple parts.  
23 However, an alternate embodiment of the present invention  
24 may comprise a single composite piece that may be

1 manufactured through any known process, such as injection  
2 molding.

3

4 **Key to Called Out Features**

5 1 Chair configuration at low height  
6 2 Primary seating surface, roughly parallel to ground  
7 3 Secondary seating surface, inner and outer  
8 circumferential edges are individually planar with a  
9 sloping surface connecting the two  
10 4 Tertiary seating surface  
11 5 Support, connecting 3 to 2  
12 6 Support, connecting 3 to 2  
13 7 Rear, right leg  
14 8 Rear, left leg  
15 9 Right heel cutout  
16 10 Left heel cutout  
17 11 Front, right leg  
18 12 Front, left leg  
19 13 Line segment interface between 2 and 3, right  
20 14 Line segment interface between 2 and 3, left  
21 15 Line segment interface between 3 and 4  
22 16 Approximated ellipse  
23 17 Inner circumferential edge of 3  
24 18 Outer circumferential edge of 3

1        19    Frontal edge of 4

2        20    Chair configuration at higher height, sufficient for  
3               lower leg clearance beneath buttocks

4

5            [041]       Referring back to Figures 3 and 4, by way of  
6    example, a chair made in accordance with the preferred  
7    embodiment of the present invention as set forth herein may  
8    have the following dimensions and/or angles: (a) is 11  
9    inches; (b) is 4 inches; (c) is 4.25 inches; (d) is 1.75  
10   inches; (e) is 12.8 degrees; (f) is 11 inches; and (g) is  
11   6.5 inches. Of course, any or all of these sample  
12   dimensions and/or angles may be varied to create a chair of  
13   a different height, width, depth, overall size, seating  
14   size and/or shape, etc. These may be varied for any number  
15   of reasons, including but not limited to the size of the  
16   intended user.

17           [042]       In yet another alternative embodiment of the  
18   present invention, a means for attaching a cushion or  
19   sponge pad may be included on primary seating surface 2  
20   and/or secondary seating surface 3. Such a cushion may be  
21   secured in place through various means, such as glue,  
22   staples, nails, sewing, etc. or may be removably attached  
23   with VELCRO™ or other similar hook and loop-type fastener  
24   devices or other non-permanent attachment means.



1           [043]       The foregoing detailed description has been  
2   given for clearness of understanding only, and no  
3   unnecessary limitation should be understood therefrom.  
4   While the present invention has been described with  
5   reference to the preferred embodiment and several  
6   alternative embodiments, which embodiments have been set  
7   forth in considerable detail for the purposes of making a  
8   complete disclosure of the invention, such embodiments are  
9   merely exemplary and are not intended to be limiting or  
10   represent an exhaustive enumeration of all aspects of the  
11   invention. The scope of the invention, therefore, shall be  
12   defined solely by the following claims. Further, it will  
13   be apparent to those of skill in the art that numerous  
14   changes may be made in such details without departing from  
15   the spirit and the principles of the invention. It should  
16   be appreciated that the present invention is capable of  
17   being embodied in other forms without departing from its  
18   essential characteristics.

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